# APPENDIX F

Air Quality Technical Memorandum

# TECHNICAL MEMORANDUM

LANDAU ASSOCIATES
ENVIRONMENTAL | GEOTECHNICAL | NATURAL RESOURCES

TO: Mike Blumen, Blumen Consulting Group, Inc.

FROM: Shannon Khounnala

DATE: September 2008

**RE: AIR QUALITY SUPPLEMENTAL TECHNICAL MEMORANDUM**
**NEW WHATCOM REDEVELOPMENT PROJECT**
**PORT OF BELLINGHAM**
**BELLINGHAM, WASHINGTON**

## INTRODUCTION

The purpose of this technical memorandum is to summarize the air quality analysis and conclusions identified in the Draft Environmental Impact Statement (DEIS) and provide a discussion of the applicability of the original air quality analysis effort to the proposed Preferred Alternative for the New Whatcom Redevelopment project.

This technical memorandum provides a brief summary of the findings from the DEIS Air Quality Technical Report (Landau Associates 2007) related to the analysis performed for the DEIS Redevelopment Alternatives. The methodology and discussion of the existing noise environment are presented in the DEIS Air Quality Technical Report. Existing conditions have not changed and are, therefore, not discussed further in this technical memorandum.

This document also provides a brief summary of the Preferred Alternative and a discussion of any differences to the air quality predicted for the redevelopment alternatives outlined in the DEIS.

## DEIS AIR QUALITY ANALYSIS

The DEIS Air Quality Technical Report (Landau Associates 2007) discussed the various pollutant emissions in the Bellingham area, which include point, area, and mobile sources. Due to the nearshore location and lack of substantial traffic congestion within Whatcom County, the predicted growth in population and increased traffic within the site area is not expected to have any significant adverse impacts to the air quality within the area, either during or after construction. Development of the roadway network and related infrastructure of the project, and operational impacts resulting from mixed land uses, would provide for a relatively small contribution to the regional concentrations of criteria pollutants. Further, due to the ongoing federal regulations aimed at addressing global climate change and the improvements to vehicle

manufacturing to reduce emissions, future air quality is expected to improve from the existing conditions, with or without the New Whatcom project.

Under each of the alternatives discussed in the Air Quality Technical Report, both non-traffic and traffic emission sources were evaluated for the initial phase to be completed by 2016 and the final buildout to be completed by 2026. The Air Quality Technical Report assumed that operational emissions, and the related potential for air quality impacts, would result from the main air polluting sources in the site area, on-road (vehicles) and non-road (trains and marine vessels) sources. Based on the transition from historical industrial operations to a mixed-use neighborhood with increased traffic, the implementation of the New Whatcom Redevelopment was not found to result in any significant impacts to the area's existing good air quality.

## PREFERRED ALTERNATIVE

Based on the information provided in the DEIS, ongoing public input, additional analysis and master planning, and coordination between the Port of Bellingham (Port) and the City of Bellingham (City), as well as other agencies, groups and stakeholders, the Port staff prepared a recommended proposal to serve as the Preferred Alternative for analysis in the Draft Supplemental EIS. The Preferred Alternative is based on a modified street grid for long-term redevelopment of the Waterfront District. The new grid would be rotated at the top of the bluff that currently divides the Waterfront District from the existing downtown in order to provide efficient connection to the City and cost-effective engineering solutions for bridging the bluff and the Burlington Northern Santa Fe (BNSF) railroad corridor. The Preferred Alternative would feature approximately 2.7 million square feet of mixed-use redevelopment by 2016, and approximately 6.0 million square feet of mixed-use redevelopment by 2026; at buildout, the Preferred Alternative would provide 33 acres of open space and parks.

The Preferred Alternative is intended to be a medium-density, sustainable development that features a diversity of uses that are complementary to the downtown Bellingham Central Business District; an infrastructure network that integrates with and connects the waterfront to surrounding areas; and a system of parks, trails, and open space that opens up the waterfront to the community. Redevelopment under the Preferred Alternative would be within the range of redevelopment assumed for the EIS Alternatives in the January 2008 DEIS. Redevelopment under the Preferred Alternative would mix and match elements of the EIS Alternatives. As an example, the redevelopment density under the Preferred Alternative would be comparable to that under EIS Alternatives 2/2a (up to 6 million square feet of office, institutional, marine,

industrial, residential, and retail uses). The amount of parks, trails, and habitat area under the Preferred Alternative would be similar to that assumed under Alternative 1 (approximately 33 acres). The Preferred Alternative also assumes relocation of the BNSF railroad corridor by 2016 (Figure 1).

As an option to the Preferred Alternative, the Straight Street Grid is also being considered. The Straight Street Grid would have a similar onsite land use and density as well as an offsite street system as the Preferred Alternative; however, the onsite street network would be oriented differently (Figure 2).

# IMPACTS

## Construction Impacts

Each of the DEIS Redevelopment Alternatives and the Preferred Alternative—which include various forms of construction activities, including soil disturbance, dust emissions, and combustion pollutants from onsite construction equipment and from offsite trucks hauling dirt, cement or building materials—would create a temporary addition of pollutants to the local air shed. These emissions will vary in both time and space as the construction activities vary with schedule and location. Similar to the discussion for each of the Redevelopment Alternatives in the DEIS Air Quality Technical Report, it is expected that construction activities related to the Preferred Alternative, and conducted with the implementation of appropriate air quality control measures required by local regulations, would not result in any adverse air quality impacts that would cause exceedances of the National Ambient Air Quality Standards (NAAQS) beyond the boundaries of the construction sites. The location of the site adjacent to Bellingham Bay further provides for an effective mixing zone and dispersion of concentrated pollutants via typical marine weather patterns. As such, no significant air quality impacts to receptors would be anticipated in conjunction with construction activities. The Preferred Alternative would not be expected to result in construction-related air quality impacts that are different from those presented in the DEIS Air Quality Technical Report.

## Operational Impacts

### Traffic

The DEIS Air Quality Technical Report provided a quantitative analysis of potential traffic-related emission impacts for the High Density Redevelopment Option (Alternative 1). The

emission analysis was conducted for the signalized intersections with the greatest amount of traffic volumes and the longest predicted delays (idling time), in order to determine "worst-case" emissions and possible impacts. Data from the transportation report, and the three worst-performing signalized intersections (greatest amount of vehicles and vehicular idle time) within the existing offsite roadway network were analyzed for future carbon monoxide (CO) emissions using the Washington State Intersection Screening Tool (WASIST). The three signalized intersections analyzed for 2016 and 2026 represented intersections within the site area that were expected to generate the greatest CO emissions.

The emissions analysis, using the traffic volumes generated under the High Density Redevelopment Option (Alternative 1), identified that all three of these intersections for both 2016 and 2026 would conform to both the 1-hour and 8-hour NAAQS. Expected vehicle emissions at other intersections both at the New Whatcom site and off site within the existing roadway network would be lower than the intersections analyzed. These results indicate that emissions from vehicles would not pose an environmental health hazard to those who live or work within the New Whatcom Redevelopment area or surrounding offsite areas.

The traffic volumes for the Preferred Alternative and the Straight Street Grid Option are predicted to be less than the traffic volumes used in the emissions modeling of the High Density Redevelopment Option (Alternative 1) in the DEIS Air Quality Technical Report (Transpo Group 2007, 2008). Therefore, it is reasonable to conclude that mobile source CO emissions will conform to the NAAQS at both onsite and offsite intersections under the Preferred Alternative and the Straight Street Grid Option, and additional air quality modeling is not required. This allows for the conclusion that vehicular traffic would not result in unacceptable operational impacts to onsite or offsite air quality receptors under the Preferred Alternative.

## Non-Road Emissions

The DEIS Air Quality Technical Report assumed that decommissioning of the PSE Energy Plant on the New Whatcom site would occur by 2026. This is also assumed under the Preferred Alternative. The Ecogen Plant may relocate to another offsite facility. The result of the decommissioning effort could remove up to approximately 77 tons (according to 2005 reported emissions) of criteria pollutants entering the atmosphere per year. Based on the transition from historical industrial operations to a mixed-use neighborhood with increased traffic, the implementation of the New Whatcom Redevelopment was not found to result in any significant impacts to the area's existing good air quality.

## Rail

The expected emissions from rail activities under the Preferred Alternative would not be expected to change from those outlined in the DEIS Air Quality Technical Report. The Air Quality Technical Report provided a detailed discussion related to the potential impacts associated with the ongoing and potentially increased operation of this facility. As reported, a minimal increase in rail traffic is expected to increase the frequency by one to two round-trip trains per day over the long term. Although this move could increase the nitrogen oxides ($NO_x$) and particulate matter (PM) concentrations for some receptors, the frequency of trains in the area and the distance to receptors following the relocation (assuming the closest receptor would be at least 150 feet from the rail line) would limit the duration of potential exposure. Because only a portion of the rail line would be relocated, it is expected that condominiums and apartments located near Laurel Street may be the only receptors that experience potential impacts with the relocation of the railway. The railroad corridor relocation, however, would be subject to a specific permitting and environmental review process that could be undertaken by BNSF/Washington State Department of Transportation in the future. A review of air quality is likely to be part of that environmental process. Additional discussion related to the rail traffic can be found in the DEIS Air Quality Technical Report.

## Marine Vessels

The expected emissions from the marina area under the Preferred Alternative would not be expected to change from those outlined in the DEIS Air Quality Technical Report. The Preferred Alternative includes a similar design for the marina slips and operations. Although the number of small recreational vessels is expected to increase and potentially bring the public within closer proximity to emissions, large marine vessel traffic is expected to decrease over time under the Preferred Alternative. Although this change may not provide any overall net increase or decrease in the emissions generated by marine vessels in the short term, smaller vessels tend to have lower, cleaner emission outputs with main engines that are regularly maintained than large marine vessels. Additional discussion related to the marina can be found in the DEIS Air Quality Technical Report.

## Mitigation Measures

### Construction Impact Mitigation

Specific air quality construction mitigation measures are outlined in the DEIS Air Quality Technical Report. The construction contractor(s) would be required to comply with all relevant federal, state, and local air quality regulations, including the preparation of a plan for minimizing dust and odors. The Air Quality Technical Report provides a list of possible mitigation measures that could be implemented to reduce potential air quality impacts during construction of the Preferred Alternative.

### Operational Impacts Mitigation

The Air Quality Technical Report outlines a number of transportation control measures aimed at reducing vehicle trips, use, miles traveled, and traffic congestion in order to promote a healthy and cleaner air environment. The design of the Preferred Alternative incorporates many of these measures in order to reduce emissions within the region.

## REFERENCES

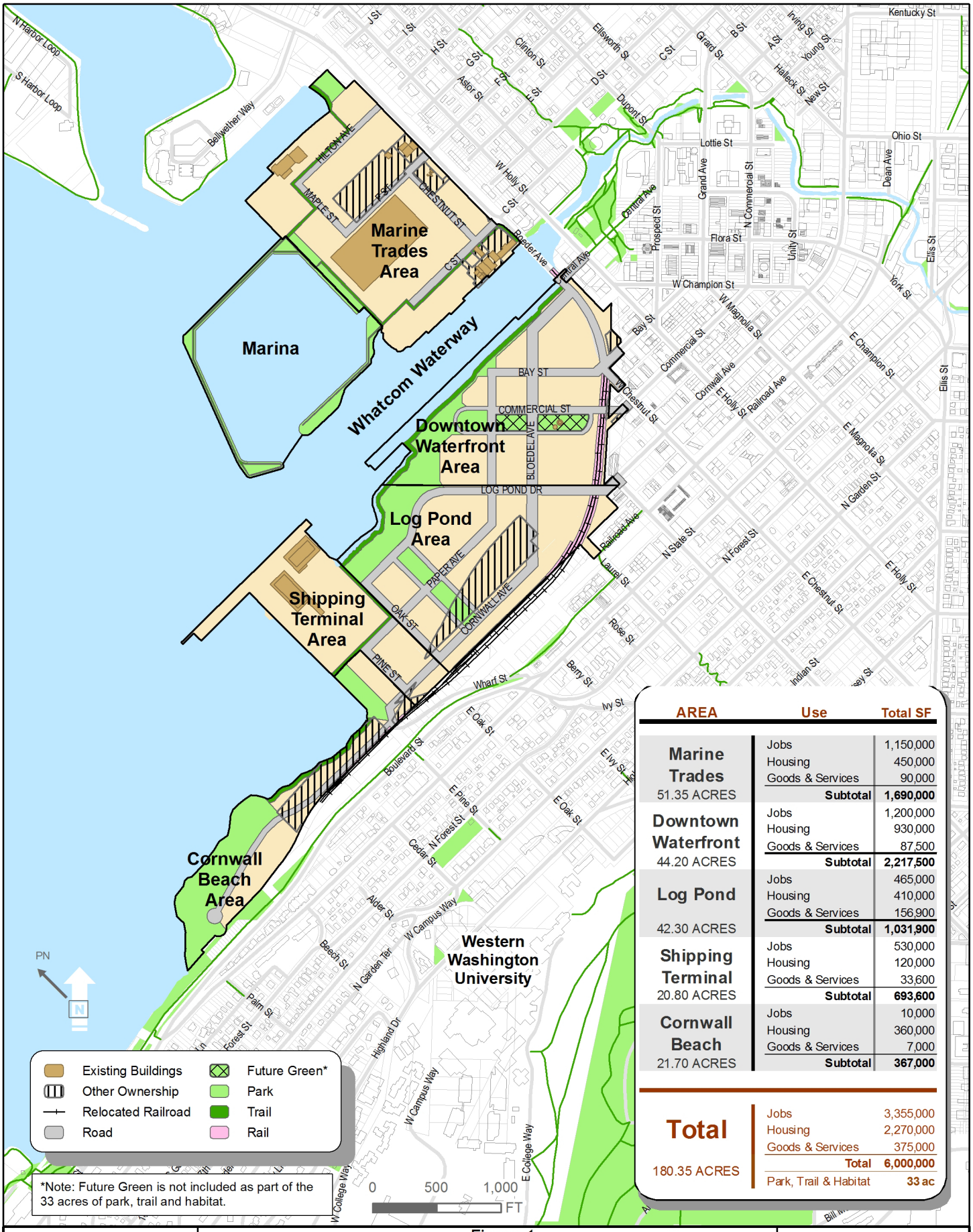
Landau Associates. 2007. Technical Memorandum: *Air Quality Technical Report, New Whatcom Redevelopment Project, Port of Bellingham, Bellingham, Washington*. From Shannon Khounnala and Chip Halbert, P.E., to Mike Blumen, Blumen Consulting Group. December.

Transpo Group, The. 2008. Appendix N: *New Whatcom Redevelopment Supplemental Transportation Discipline Report, Draft Supplemental Environmental Impact Statement*. In Preparation.

Transpo Group, The. 2007. Appendix N: *New Whatcom Redevelopment Transportation Discipline Report, Draft Environmental Impact Statement*. Prepared for Port of Bellingham and City of Bellingham. November.

## ATTACHMENTS

Figure 1: Preferred Alternative
Figure 2: Preferred Alternative with Straight Street Grid Option




| AREA | Use | Total SF |
|---|---|---|
| **Marine Trades** 51.35 ACRES | Jobs | 1,150,000 |
| | Housing | 450,000 |
| | Goods & Services | 90,000 |
| | **Subtotal** | **1,690,000** |
| **Downtown Waterfront** 44.20 ACRES | Jobs | 1,200,000 |
| | Housing | 930,000 |
| | Goods & Services | 87,500 |
| | **Subtotal** | **2,217,500** |
| **Log Pond** 42.30 ACRES | Jobs | 465,000 |
| | Housing | 410,000 |
| | Goods & Services | 156,900 |
| | **Subtotal** | **1,031,900** |
| **Shipping Terminal** 20.80 ACRES | Jobs | 530,000 |
| | Housing | 120,000 |
| | Goods & Services | 33,600 |
| | **Subtotal** | **693,600** |
| **Cornwall Beach** 21.70 ACRES | Jobs | 10,000 |
| | Housing | 360,000 |
| | Goods & Services | 7,000 |
| | **Subtotal** | **367,000** |
| **Total** 180.35 ACRES | Jobs | 3,355,000 |
| | Housing | 2,270,000 |
| | Goods & Services | 375,000 |
| | **Total** | **6,000,000** |
| | Park, Trail & Habitat | **33 ac** |

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Figure 1
Preferred Alternative
2026

New Whatcom Redevelopment EIS

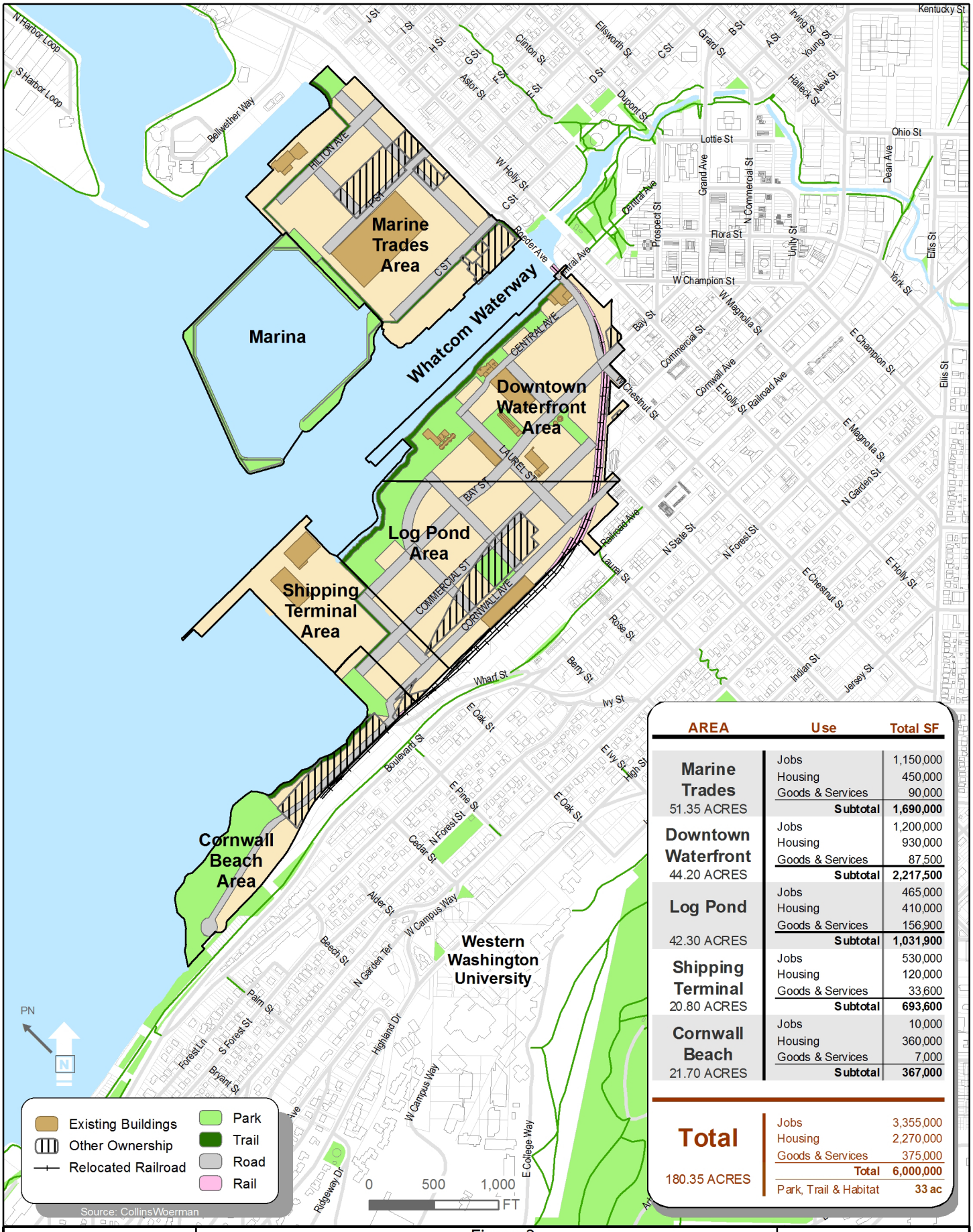


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Figure 2
Straight Street Grid Option
2026

New Whatcom Redevelopment EIS